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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/607,005	06/27/2003	Koji Masuda	239545US2	4936

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EXAMINER
PHAM, HAI CHI

ART UNIT	PAPER NUMBER
2861	

DATE MAILED: 11/18/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/607,005	MASUDA, KOJI	
	Examiner	Art Unit	
	Hai C. Pham	2861	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *08 September 2005*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-5 and 7-22* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *11-22* is/are allowed.

6)☒ Claim(s) *1-5 and 7-10* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *27 June 2003* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

FINAL REJECTION

Drawings

1. Figures **35-41** should be designated by a legend such as --PRIOR ART-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 1-5, 8-13 and 21-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ishii (JP 2001-080111) in view of Yamanaka et al. (JP 2001-138568).

Ishii, a previously cited prior art, discloses an optical writing unit comprising a light emitting device array comprising a plurality of light emitting device array chips (LED array chips 12), each of which comprises a plurality of light emitting devices (LEDs 11)

that are arranged at a predetermined interval P (e.g., the pitch of the LEDs being set at P = 63.5 μm for an LED printhead of 400 dpi) (English translation, paragraph [0004]), and an image forming device array that further comprises image forming devices (although not shown, the imaging lenses such as the rod lens arrays are inherently included in the electrostatic printing device using a light emitting device array for forming an electrostatic latent image on a photosensitive drum), wherein the light volume of the light emitting devices that are located closest and next closest to an edge of the light emitting device array chip can be set differently from other light emitting devices excluding the closest and next closest light emitting devices (in the second embodiment as displayed in Fig. 3, Ishii teaches two end LED units 11 located at each end of the light emitting array chip 12 each having an increased quantity of light as compared to that emitted from each of the remaining light emitting elements within the LED array chip).

Ishii further teaches the light volume of the light emitting devices being adjusted by adjusting the drive current of the light emitting device according to the property of each individual LED concerning an exposure intensity distribution of the individual LED and according to the input image data (English Translation, paragraph [0022]), but Ishii fails to explicitly teach the predetermined range within which the light volume of the light emitting devices, and that the predetermined range is defined for an effective image area in its entirety (claims 1, 9-10), the acquisition of the correlation between the light volume and the property value of the light emitting device (claim 3), the acquisition of the range of property value based on the property values of the plurality of the

preceding light emitting devices (claim 4), and the compensation value for the driving current (claim 5), more than half the light emitting elements located at the ends of the LED chip being measured (claim 8).

Regardless, it is old and well known in the art that there is a problem inherent in the printer head using the LED elements in that the variation in an exposure amount of the photosensitive body is caused by the characteristics of each individual LED element as evidenced by Yamanaka et al., which discloses a method of compensating for the light output variations in a printing head using a plurality of LED chips (2), each having a plurality of light emitting elements, the light output variation being due to the variation in the LED luminescence property, wherein the light intensity distribution for the plural light emitting elements is acquired (Fig. 4) by measuring the intensity of light emitted by the light emitting elements at a predetermined cycle to determine a property value of the intensity distribution, which lies between the IMAX and IMIN values, in order to adjust the light intensity emitted by each of the light emitting elements, based on which the driving current is adjusted for each of the light emitting elements to obtain a uniform luminance across the image exposure area. Yamanaka et al. teaches the predetermined cycle comprising M+N of light emitting elements, where M=N=1 (every other LED elements being selected).

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to set the compensation of the light intensity distribution of the LED units of Ishii by adjusting the drive current based on the measurement of the light output of the plurality of light emitting elements and the acquisition of the

correlation between the light quantity and the property value of the light emitting device as taught by Yamanaka et al. The motivation for doing so would have been to correct the inherent unevenness luminance of the individual light emitting elements so as to produce a highly uniform light distribution across the image exposure area.

Allowable Subject Matter

4. Claims 11-22 are allowed.

5. The following is an examiner's statement of reasons for allowance: claims 11, 21, 22 are patentable over the prior art patents and printed publications because of the specific process related to adjust the light output of the optical writing unit, which has a plurality of light emitting device array chips, wherein "the light volume of each of the light emitting devices is set up such that the gradient of an approximated regression line of exposure areas corresponding to a plurality of the light emitting devices that are selected based on a predetermined cycle falls within a predetermined range for an effective image domain in its entirety". The combined limitations as currently claimed are not taught by the prior art of record considered alone or in combination.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Response to Arguments

6. Applicant's arguments with respect to claims 1-5 and 7-10 have been considered but are moot in view of the new grounds of rejection as presented in this office action.

Conclusion

7. Applicant's amendment, which changed the scope of the base claim, necessitated the new grounds of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hai C. Pham whose telephone number is (571) 272-2260. The examiner can normally be reached on M-F 8:30AM - 5:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David L. Talbott can be reached on (571) 272-1934. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

HAI PHAM
PRIMARY EXAMINER
November 16, 2005